

VARIABILITY IN DORSAL PATTERNING AMONG POPULATIONS OF  
HAWAIIAN "HAPPY-FACE" SPIDERS (THERIDION SP. OR SPP.)  
ON THE BIG ISLAND\*

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Since the December 1972 discovery on O'ahu of an apparently undescribed comb-footed spider (Theridiidae) with a striking "happy-face" design on its back, close relatives have been found on Maui and the Big Island. Preliminary surveys of Big Island forests have produced over 100 specimens and revealed a remarkable spectrum of dorsal patterning variation among populations of these tiny (3-4 mm body length) Hawaiian leaf-dwelling spiders. Pending study by a specialist, it is unclear whether these populations represent a single very variable species or several species. They are tentatively assignable to the widespread genus Theridion, which includes 10 described species (plus one subspecies) endemic to Hawai'i, only one of which bears resemblance to the "happy-face" group. These previously unknown Hawaiian spiders seem to be another example of the extremes of "genetic plasticity" and "evolutionary flux" expressed among other closely-related groups of Hawaiian organisms (e.g., Anomalochrysa lacewings, Achatinella tree snails, Metrosideros trees) in response to generous ecological opportunities and minimized inhibiting pressures presented to those groups by the unique Hawaiian environment.